ARCADIS
Infrastructure · Water · Environment · Buildings

ARCADIS
6723 Towpath Road
PO Box 66
Syracuse
New York 13214-0066
Tel 315 446 9120
Fax 315 445 9161

Transmittal Letter

To:
Keith M. Krawczyk
Project Coordinator
MDEQ – Remediation Division
Superfund Section
Constitution Hall
P.O. Box 30426
Lansing, MI 48909-7926

Copies:
Garry Griffith, P.E., Georgia-Pacific LLC
(transmitted via e-mail)
Michael Berkoff, USEPA Region 5
Rich Anson, Terra Contracting Services, LLC
(transmitted via e-mail)
Dawn Penniman, P.E., ARCADIS
Michael Kohagen, ARCADIS
(transmitted via e-mail)

From:
Pat M. McGuire

Date:
June 25, 2013

Subject:
King Highway Landfill OU – 2013 1st Semi-Annual Landfill Inspection Report

ARCADIS Project No.:
B0064583.0004.00907

We are sending you:

☒ **Enclosed** ☐ **Under Separate Cover Via _____ the Following Items:**

☐ Shop Drawings ☐ Plans ☐ Specifications ☐ Change Order
☐ Prints ☐ Samples ☐ Copy of Letter ☒ Reports
☐ Other:

Copies	Description	Action*
1	2013 1st Semi-Annual Landfill Inspection Report	F

Action*

☐ A Approved ☐ CR Correct and Resubmit ☐ Resubmit _____ Copies
☐ AN Approved As Noted ☒ F File ☐ Return _____ Copies
☐ AS As Requested ☐ FA For Approval ☐ Review and Comment
☐ Other:

Mailing Method

☐ U.S. Postal Service 1st Class ☐ Courier/Hand Delivery ☐ FedEx Priority Overnight ☐ FedEx 2-Day Delivery
☐ Certified/Registered Mail ☐ United Parcel Service (UPS) ☒ FedEx Standard Overnight ☐ FedEx Economy
☐ Other:

Comments: Enclosed is the 2013 1st semi-annual landfill inspection report. Please feel free to contact me at 315.671.9233 or pat.mcguire@arcadis-us.com if you have any questions.

KING HIGHWAY LANDFILL
POST-REMEDIATION INSPECTION FORM

SOP M - Post-Remediation Inspection Procedures

Inspection Date: 5/31/2013 Weather Conditions: 70°F, Partly Sunny, Wind = 15 mph, Humidity 85%, Bar. Pres. 29.92

Inspectors: B. Lawrence

Time Arrived: 1:15 (AM /(PM) Time Departed: 3:30 (AM /(PM)

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
	Yes	No			
Cover System					
Settlement	X		Strip the soil, place and compact suitable soils within the depression, and replace excavated soil. Once the proper slope is restored, reseed the disturbed area		
Water Ponding	X		Strip the soil, place and compact suitable soils within the depression, and replace excavated soil. Once the proper slope is restored, reseed the disturbed area		
Soil Erosion	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth		
Slope Movement/ Failure	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth		
Exposed FML	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth		
Undesirable Growth (Rooty Trees or Shrubs)	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth		
Protruding Objects	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth		
Burrowing Animals	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth		
Cracks	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth		
Disturbance or Loss of Vegetation	X		Reseed areas of lost vegetation. Do not allow vegetation (except for grasses) to establish on the cover		

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
	Yes	No			
Sedimentation Basin and Drainage Outlet					
Erosion	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth		
Siltation	X		Remove excessive sediment buildup that has caused filling of the basin bottom to elevations above the design elevation (e.g., design elevation near outlet structure is 764.5 feet)		
Debris Buildup		X	Remove debris washed out materials	Soil material produced from hydrovac operation during the recent installation of additional gas probes GW-18 through GW-21 was observed within the settling basin. This material has since been removed from the sedimentation basin and placed in a covered roll-off container, which will be removed from the site prior to the next landfill inspection. Work to be performed by Terra Contracting Services, LLC (Terra).	1
Condition of Discharge Structures & Inlets	X		Remove any debris or obstructions/blockages. Indicate corrective measures for damaged inlet or discharge structures		
Inappropriate Vegetation	X		Only grass will be allowed to establish on the cover. Roots of trees and shrubs will be cut out. Inspect the area every 2 weeks following removal to ensure that root systems have not returned		
Ditches and Diversion Berms					
Siltation	X		Remove excessive sediment buildup		
Debris Buildup	X		Remove debris washed out materials		
Disturbed Vegetation		X	Reseed areas of lost vegetation	Limited vegetative cover was identified in an area east of the sedimentation basin. This area will be to seeded and mulched to promote vegetative growth prior to the next landfill inspection, which will be performed by Terra. In addition, the area will be monitored for vegetative growth during the next landfill inspection.	2, 3, 4
Erosion	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth		

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
	Yes	No			
Culverts					
Siltation	X		Remove excessive sediment buildup		
Clogging	X		Remove any debris or obstructions/blockages obstructing flow through the culvert		
Riprap, Sheet pile Wall, and Erosion Control Blankets					
Instability or Damage	X		Regrade or place additional appropriate materials (e.g., riprap, topsoil) in affected areas and promptly reseed where necessary to establish vegetative growth. Replace erosion control blankets if damaged. Note damage to sheet pile wall		
Sheet pile Wall					
Soil Erosion, Subsidence, or Cracking Behind Wall	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth		
Wall Joints	X		Note any gaps in the wall joints and any material migration from behind the wall		
Overall Wall Stability	X		Note whether the top of the wall has been displaced outward. Note any holes in the wall caused by corrosion		
Surface Water and Pore Water Collection System					
Clogging of Outlets	X		Remove any debris or obstructions/ blockages obstructing flow through the pipe		
Evidence of Settlement/ Exposed Materials		X	Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth	Erosion rills were observed on the slope above the south pore water pipe outlet. This area will be regraded and seeded and erosion control blanket installed by Terra to prevent further surface erosion and rill formation and promote the establishment of vegetation to prevent future erosion along the slope. The slope will be monitored during the next landfill inspection for erosion and establishment of vegetation.	5, 6, 7
Condition of Inlet/Outlets	X		Replace or repair pipes that have been damaged such that flow is obstructed	The south pore water discharge pipe was observed to be under water at the toe of the rip rap. The south pore water pipe cannot be raised and still allow for positive drainage to occur. The pipe appears to be submerged only following significant rainfall events.	8

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
	Yes	No			
Landfill Gas Management System					
Condition of Exterior Vent Pipe Components	X		Replace broken/damage vent pipes. Exposure of geomembrane pipe boot above the ground surface should be noted, as well as any damage to the pipe boot.		
Condition of Exterior Gas Probe Components	X		Replace broken/damage gas probes or components		
Evidence of Differential Settlement[1]	X		Replace vent pipes or gas probes with severe leans or where underground components are observed above ground		
Operation of Wind Turbine Ventilators	X		Repair or replace wind turbine ventilators that are not turning or have been broken/damaged		
Groundwater Monitoring System					
Condition of Surface Seal and Pipe Boot	X		Replace or repair the concrete surface seal as necessary. Exposure of geomembrane pipe boot above the ground surface should be noted, as well as any damage to the pipe boot.		
Condition of Protective Casing	X		Replace damaged protective casings		
Condition of Cap	X		Replace damaged caps		
Condition of Locks	X		Replace locks where missing or damaged		
Integrity of Exterior Well Components	X		Replace broken/damaged monitoring wells		

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
	Yes	No			
Site Access Roads					
Condition of Roadways	X		Regrade or place additional appropriate materials (e.g., gravel) in depressions to maintain proper drainage and even roadway surface		
Conditions of Access Gates	X		Replace or repair damaged gates. Reattach mesh fencing that has pulled away from the top rail		
Security Systems					
Condition of Fencing		X	Replace or repair damaged fencing. Removed trees or branches that have fallen onto fencing. Clear vegetation away from fencing. Reattach mesh fencing that has pulled away from the top rail	Multiple sections of fencing were removed during installation of additional gas probes GW-18 through GW-21 along the western perimeter of the site. A 25-foot-long section of barbed wire was observed to be detached from the top rail of fence along southern perimeter of the site. The fence sections will be repaired and the barbed wire will be reattached to the top rail along this section of the fencing by Terra prior to the next inspection.	
Condition of Signs	X		Replace or repair missing or damaged signs to eliminate trespassing		
Condition of Locks	X		Replace missing or damaged locks	All locks in good condition.	

Notes:
1. Evidence of differential settlement includes heaving around vent pipes and/or gas monitoring probes, leaning vent pipes and/or gas monitoring probes, and underground components of vent pipes and/or gas probes exposed above ground surface.

Additional Remarks: _____

Photo No. 1: Photo shows the overburden soil material located within the sedimentation basin at the KHL.

Photo No. 2: Photo shows area of limited vegetation east of the sedimentation basin.

Photo No. 3: Photo shows area of limited vegetation east of the sedimentation basin.

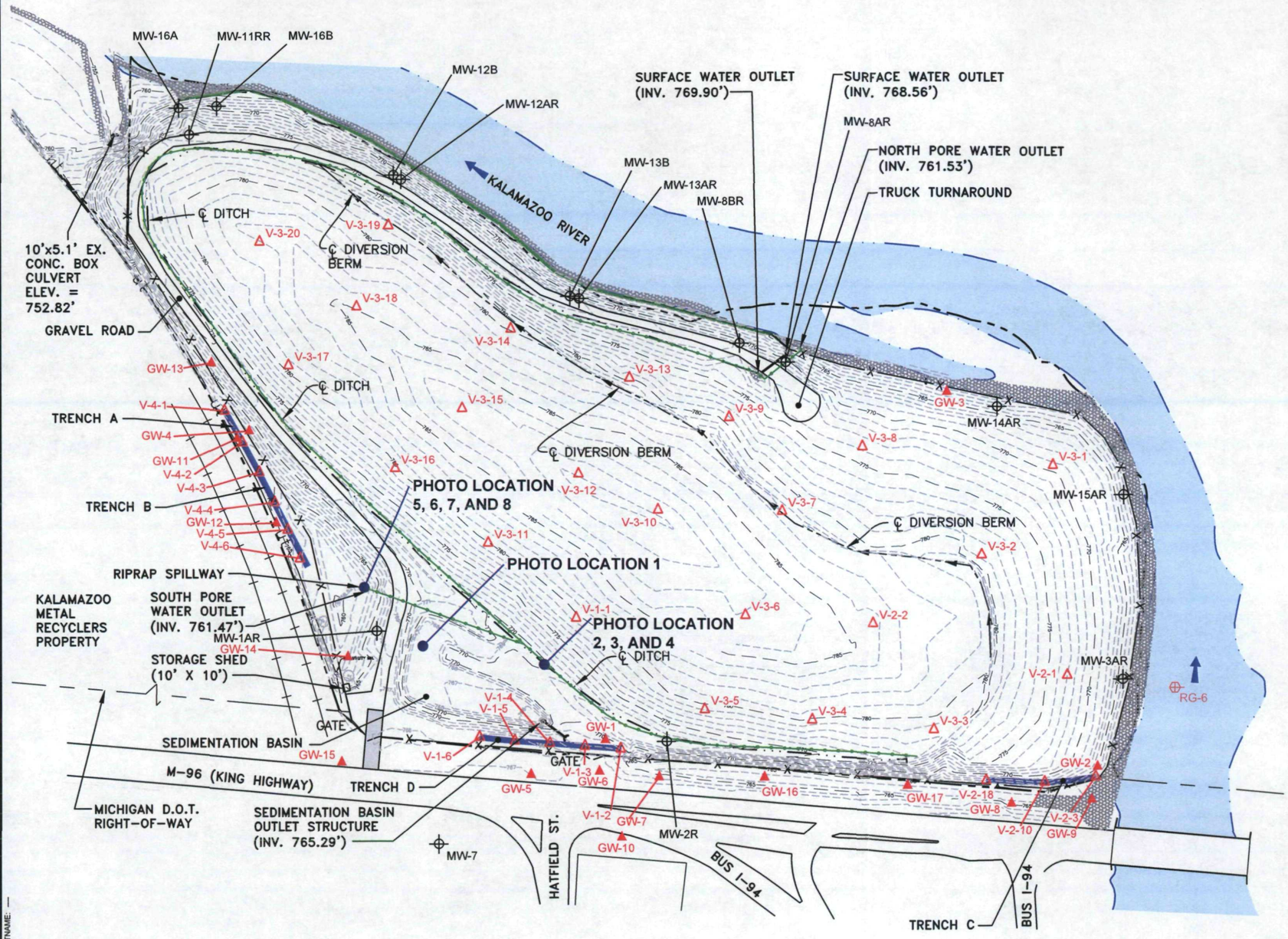
Photo No. 4: Photo shows area of limited vegetation east of the sedimentation basin.

Photo No. 5: Photo shows erosion on the slope above the rip rap at the outlet of the south pore water discharge pipe.

Photo No. 6: Photo shows erosion on the slope above the rip rap at the outlet of the south pore water discharge pipe.

Photo No. 7: Photo shows erosion on the slope above the rip rap at the outlet of the south pore water discharge pipe.

Photo No. 8: Photo shows the outlet of the south pore water discharge pipe under water.



LEGEND:

- APPROXIMATE OUTSIDE PARCEL BOUNDARY
- DITCH LINE
- ABANDONED RAILROAD
- SHEETPILE WALL
- ACCESS ROAD
- RIPRAP
- CULVERT PIPE
- FINAL AS-BUILT INDEX CONTOUR
- FINAL AS-BUILT INTERMEDIATE CONTOUR
- SECURITY FENCE
- PORE WATER COLLECTION PIPE
- PORE WATER DRAIN
- APPROXIMATE WATER EDGE
- V-1-2 GAS VENTS
- LANDFILL GAS CUTOFF TRENCH
- FLOW DIRECTION
- MW-14 MONITORING WELL
- RG-3 FORMER RIVER GAUGE STATION (NO LONGER IN USE)
- GW-2 LOCATION OF GAS MONITORING PROBES

NOTES:

1. BASE MAP INFORMATION OBTAINED FROM CADD DRAWING FILE DEVELOPED BY RMT, INC., ANN ARBOR, MICHIGAN (CADD FILE: L1630SU01.DWG AS-BUILT SURVEY; 8/21/00).
2. FINAL AS-BUILT CONTOUR ELEVATIONS ARE SHOWN AND ARE BASED ON A FIELD SURVEY BY ATWELL-HICKS, INC., DATED 9/27/00 WITH REVISIONS DATED 10/23/00, 12/21/01, 12/10/02, AND 7/24/03.
3. ELEVATIONS ARE BASED ON NGVD OF 1929 (MSL).
4. PROPERTY SURVEY PERFORMED BY WILKINS & WHEATON ENGINEERING CO., INC., ON 7/1/96.
5. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
6. LOCATIONS OF GW-5, GW-6, GW-7, GW-8, GW-9, AND GW-10 ARE BASED ON A FIELD SURVEY BY TERRA CONTRACTING LLC, DATED 9/23/05.
7. LOCATION OF GW-11 IS BASED ON A FIELD SURVEY BY TERRA CONTRACTING LLC, DATED 1/11/06.
8. LOCATIONS OF RG-6, V-4-4, V-4-5, AND V-4-6 ARE BASED ON A FIELD SURVEY BY TERRA CONTRACTING LLC, DATED 6/7/06.
9. LOCATIONS OF V-1-2 THROUGH V-1-6, V-2-3, V-2-10, AND V-2-18 ARE BASED ON MULTIPLE FIELD SURVEYS CONDUCTED BY TERRA CONTRACTING, LLC. IN APRIL 2008. GAS VENTS V-2-4 THROUGH V-2-9, AND V-2-11 THROUGH V-2-17 ARE NOT SHOWN FOR CLARITY PURPOSES (THESE VENTS ARE LOCATED ALONG TRENCH C).
10. LOCATION OF GW-12 IS APPROXIMATE.
11. LOCATIONS OF GW-13 THROUGH GW-17 BASED ON FIELD SURVEY CONDUCTED BY PREIN & NEWHOF ON 11/1/11.

ALLIED PAPER, INC./PORTAGE CREEK/
KALAMAZOO RIVER SUPERFUND SITE

KING HIGHWAY LANDFILL OPERABLE UNIT

LANDFLL INSPECTION PHOTO LOCATIONS

ARCADIS

FIGURE 1